Baton Rouge Community College
Academic Affairs Master Syllabus

Date Approved or Revised: July 19, 2005

Course Name: Introduction to Physics
Course Number: PHYS 110

Lecture Hrs. 3 **Lab Hrs. 0** **Credit Hrs. 3**

Course Description: Introduces principles of physics and techniques of problem solving. Emphasizes units of measure, three-dimensional vectors and trigonometry, kinematics, graphical analysis and equivalent methods in calculus, Newton's laws of motions, work and energy, and oscillating systems

Prerequisites: MATH 101 or MATH 110 and MATH 111 or MATH 120 or placement to higher level than MATH 120.
Co-requisites: MATH 210

Suggested Enrollment Cap: 30

Learning Outcomes: Upon successful completion of this course, the student will be able to:

- Apply the concepts of displacement, velocity, and acceleration to motion in one direction
- Illustrate the use of Newton's Laws of motion in the analysis of motion affected by forces
- Recognize the concepts of conservation and its application to one-dimensional collisions and mechanical energy in frictionless situations
- Apply the concepts of vibrational motion to pendulum and spring systems
- Describe wave motion and properties
- Demonstrate the relevance of physics to everyday life
- Solve scientific problems through synthesis and analysis

Assessment Measures: Instructors may use a variety of assessment measures to assess student performance. But, the following assessments will be used in all sections:

- Individual instructor-designed exams will collectively assess all learning outcomes and will be administered during the semester as listed in the course syllabus.
- Individual instructor-designed comprehensive final exam, adhering to a department-determined content, will assess all learning outcomes.
- Individual instructor-designed or collaborative instructor-designed assignments will be given as a portion of the total grade and will include projects, homework, and quizzes; all assignments will be graded using an instructor-designed rubric.
- Student organization of data will be evaluated by instructor observations of student experimental records using an instructor-designed rubric.

Information to be included on the Instructors' Course Syllabi:

- ***Disability Statement*:** Baton Rouge Community College seeks to meet the needs of its students in many ways. See the Office of Disability Services to receive suggestions for disability statements that should be included in each syllabus.

- ***Grading:*** The College grading policy should be included in the course syllabus. Any special practices should also go here. This should include the instructor's and/or the department's policy for make-up work. For example in a speech course, "Speeches not given on due date will receive no grade higher than a sixty" or "Make-up work will not be accepted after the last day of class."

- ***Attendance Policy*:** Include the overall attendance policy of the college. Instructors may want to add additional information in individual syllabi to meet the needs of their courses.

- ***General Policies*:** Instructors' policy on the use of things such as beepers and cell phones and/or hand held programmable calculators should be covered in this section.

- ***Cheating and Plagiarism*:** This must be included in all syllabi and should include the penalties for incidents in a given class. Students should have a clear idea of what constitutes cheating in a given course.

- ***Safety Concerns:*** In some programs this may be a major issue. For example, "No student will be allowed in the safety lab without safety glasses." General statements such as, "Items that may be harmful to one's self or others should not be brought to class."

- ***Library/ Learning Resources:*** Since the development of the total person is part of our mission, assignments in the library and/or the Learning Resources Center should be included to assist students in enhancing skills and in using resources. Students should be encouraged to use the library for reading enjoyment as part of lifelong learning.

Expanded Course Outline:

I. Measurement of Physical Quantities
   A. Scientific Method
   B. Measurement, units and significant digits

II. Vector Operations and Laws of Motion
   A. Position, velocity and acceleration
   B. Motion in 1- dimension
   C. Vectors and vector operations
   D. Motion in 2 and 3 dimensions
   E. Newton's Laws of Motion
   F. Friction and applications of Newton's Laws

III. Energy and Work
   A. Work and kinetic energy
   B. Potential energy and applications of energy conservation

IV. Momentum

A. Systems of particles and center of mass
B. Conservation of linear momentum
C. Simple harmonic motion

V. Fluid Mechanics